3015-2124 Upconverter, 21 - 24 GHz

The 3015-2124 Upconverter converts 70 ± 18 MHz to 21 to 24 GHz in 125 kHz steps (1 kHz opt- X1008). This unit combines a 70 MHz to 3-4GHz agile upconverter with a multi-band block upconverter to obtain the wide tuning range. Synthesized local oscillators (LO) provide frequency selection. Multi-function switches select the RF frequency, gain, and other parameters. Front panel LEDs provide indication of DC power (green), PLL alarm (red), remote operation (yellow) or the TX carrier is muted (yellow). Variable attenuators for the IF input and output provide a gain range of -10 to +20 dB as adjusted by the front panel multi-function switches. Remote operation allows selection of frequency and gain. Parameter selection and frequency and gain settings appear on the LCD display. Connectors are BNC (female) for IF and external 10MHz reference input and output, and 2.92 mm (female) for the RF output. The unit is powered by a 100-240 ±10% VAC power supply, and housed in a 1 3/4" X 19" X 18" rack mount chassis.

Front Panel

MODEL 3015

UPCONVERTER

CROSS TECHNOLOGIES INC.

EQUIPMENT SPECIFICATIONS*

**Input Characteristics**

- Impedance: 75 Ω
- Return Loss: 18 dB
- Frequency: 70 ± 18 MHz
- Input Level: -30 to -10 dBm

**Output Characteristics**

- Impedance/Return Loss: 50Ω/18 dB typ., 14dB min.
- Frequency: 21 to 24 GHz
- Output level: -15 to 0 dBm
- Output 1 dB compression: +10 dBm

**Channel Characteristics**

- Gain Max/range (adj.): 20 ± 2 dB Max/-10.0 to +20.0 dB, 1dB ± 1 dB dB steps
- Spurious, Inband: < -50 dBc
- Spurious, Out of band: < -50 dBc for two carriers each at -5 dBm out
- Intermod: < -50 dBc for two carriers each at -5 dBm out
- Frequency Response: ±3.0 dB, 21-24 GHz; ±1.5 dB, any 1 GHz band; ± 1.0 dB, 36 MHz BW
- Group Delay, max: 0.02 ns/MHz² parabolic; 0.05ns/MHz linear; 1 ns ripple, 36 MHz BW
- Frequency Sense: Non-inverting

**Synthesizer Characteristics**

- Frequency Accuracy: ± 0.01 ppm max over temp internal ref.; external ref. input
- Frequency Step: 125 kHz minimum, (1 kHz opt- X1008)
- External 10 MHz level: +3 dBm ± 3 dB, 50Ω

**Phase Noise @ Freq**

<table>
<thead>
<tr>
<th>Frequency (GHz)</th>
<th>100 Hz</th>
<th>1kHz</th>
<th>10kHz</th>
<th>100kHz</th>
<th>1 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>dBc/Hz</td>
<td>60</td>
<td>70</td>
<td>80</td>
<td>90</td>
<td>100</td>
</tr>
</tbody>
</table>

**Controls, Indicators**

- Freq/Gain Selection: Direct readout LCD; manual or remote selection
- Pwr; Alm; Remote; Mute: Green LED; Red LED; Yellow LED; Yellow LED
- Remote: RS232C, 9600 baud (RS422/485/opt.-Q, Ethernet/opt-W8,18,28)

**Other**

- RF, IF Connectors: 2.92 mm (female), BNC,75Ω (female), (50Ω IF opt- S29)
- 10MHz Connectors: BNC (female) 50Ω, works for 50 or 75 ohms
- Alarm/Remote Connector: DB9 (female) - NO or NC contact closure on Alarm
- Size: 19 inch, 1RU standard chassis 1.75” high X 18.0” deep
- Power: 100-240 ±10% VAC, 47-63 Hz, 60 watts max.

*10°C to 40°C; Specifications subject to change without notice

Bundled Options:

Bundle #01 includes: S29,W8,W16,W70, X1008

Available Options

- Q - RS485 Remote Interface
- W8 - Ethernet; w/Web Browser (WB)
- W16 - Test Data
- W18 - Ethernet; w/WB & SNMP
- W28 - Ethernet; w/TCP/IP, Telnet
- W71 - IF Mon., - 20dB, 50 ohm
- W70 - RF Mon., - 20dB, 50 ohm
- X1008 - 1 kHz steps

Connectors/Impedance

- S29 - 2.92mm (RF), 50Ω BNC (IF)
- SS29 - 2.92mm (RF), SMA (IF)